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## ANALYSIS OF ONE HUNDRED AND NINE CASES OF RHEUMATISM TREATED WITH SALICYLIC ACID AND SALICINE, (WITH TABLES.)

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A TABULATED history is presented below of one hundred and nine cases of rheumatism treated with salicylic acid and salicine, at the Boston City Hospital, in the service of Drs. Borland, Blake, Curtis, Edes, Draper, Doe, Lyman, and Stedman.

Salicylic acid was first prescribed in rheumatism in this hospital on February 12, 1876, by Dr. J. N. Borland, and has been used in nearly all of the cases which have entered since. Our cases are not selected, but represent all those of rheumatism which have entered the hospital since the date mentioned except those of undoubted chronic character; fifty-nine were males, fifty females; thirty-nine had out-door occupations or those necessitating exposure; seventy, in-door or unexposed occupations; fifty-seven suffered from the first attack, thirty-two from the second, ten from the third, one each from the fourth and fifth, three from the seventh, three from "several," and two from "many" attacks.

In thirty-eight of the sixty-three cases observed which were treated with salicylic acid, the heart was normal throughout. In twenty-four the heart was affected at entrance. In two the cardiac disease disappeared while in the hospital.

In Cases 9, 25, and 27, the heart became affected after entrance. In Case 9 the heart was not affected until after the relapse, but the murmur became well pronounced before discharge.

Case 25 had complained of pain over præcordia and had a rapid and weak heart, with dyspnoea, from the time of entrance, but no abnormal sound was detected upon repeated examination until the eleventh day or long after convalescence.

Case 27 is interesting from the development of pericarditis after the rheumatic symptoms had wholly disappeared, although the right hand became affected again four days later. The autopsy showed the endocarditis present upon entrance to have been of recent date.

It is fair to assume that the heart was normal in a very large proportion of the cases in which its condition was not recorded. But upon the basis of sixty-three cases, the heart became affected after entrance in only 4.76 per cent., while under the alkaline treatment, in the series of cases reported by Dr. J. G. Blake,<sup>1</sup> 13 $\frac{3}{4}$  per cent. developed heart affections after entrance.

The average time to relief, that is, to the hour when the symptoms were distinctly ameliorated, was 1.46+ days, varying from three hours to four days. This is probably much too high, as in very few cases were more than ten to fifteen doses needed before marked benefit was experienced. The average time to complete cessation of pain was 2.85+ days, varying from twelve hours to fifteen days.

The average amount of acid taken to produce relief was one hundred and fifty-four grains; the quantity varied from thirty to two hundred and ten grains.

The amount required to produce complete relief from pain and mobility of the joints was 531.22 grains to each patient; to each attack, 343.73 grains. Deducting the three largest amounts taken, 880, 940, and 2250 grains, the average to each patient was 400.84 grains.

The average time during which the acid was taken by each patient was 6.22 days, varying from one day to thirty-one days. Excluding Cases 1, 19, 26, 36, and 103, the average number of days each patient was in the hospital was 18 $\frac{1}{2}$ , varying from three to fifty-nine days.

Case 1 is excluded because of the short time the acid was taken, the others because of their termination in chronic rheumatic arthritis. The acid, according to the records, produced no relief in three cases. In the first but five doses or fifty grains were given which is ordinarily too small an amount to be of service. Case 5 was subacute, in a debilitated subject, a variety not so easily controlled by the acid as a more acute form, and the trouble was probably due more to debility than to a true rheumatic state. Case 6 took but thirty grains a day, too small an amount to affect an acute case.

Two cases died, one from pericarditis and one from cerebral complications. Eighteen cases had one relapse, three had two, and one had five while in the hospital. There were very few cases in which there were not occasional pains for a time after the omission of the acid.

Nausea and vomiting were noted in twenty cases (in one case complicated by pregnancy), or in 18.8 per cent. Burning in the stomach occurred in one case. Headache was noted in six, ringing in the ears in nineteen, and deafness in ten cases; numbness and prickling of the affected parts were observed in three cases, in one extending to all parts of the body and in another persisting for two days after omission of the acid.

<sup>1</sup> Boston City Hospital Reports, First Series.

CASES TREATED WITH SALICYLIC ACID, IN WHICH THE HEART WAS EXAMINED AND ITS CONDITION RECORDED.

NUMBER.	NAME.	AGE.	SEX.	OCCUPATION.	NUMBER OF ATTACK.	STATE OF HEART AT ENTRANCE.	STATE OF HEART WHILE IN HOSPITAL, AND AT DISCHARGE.	KIND OF ATTACK.	DAYS SINCE ENTRANCE.	TIME TO RELIEF, AND AMOUNT OF ACID.	DAYS IN HOSPITAL.	REMARKS.	CONDITION ON DISCHARGE.
1	C. E.	25	M.	Cook.	Second.	Aortic and mitral murmurs.	At discharge, double mitral.	Acute.	8	Took but 50 grs. acid, with no effect. Other treatment alkaline.	57	5 hours.	Much relieved.
2	C. W.	23	M.	Water.	First. <sup>1</sup>	Normal.	Normal.	Subacute.	20	Alkaline treatment 20 days, with relief. Acid 24 hours, with relief.	45	Acid 5 days; slight nausea.	Well.
3	C. R.	37	F.	Laundress.	" 3	"	"	"	4	No treatment 8 days. Acid 1 day, with relief.	27	Acid 7 days; headache.	Relieved.
4	A. A.	35	F.	Seamstress.	Seventh.	Aortic systolic murmur.	Not examined.	Acute.	3	Acid 3 days, with no relief.	15	Acid 3 days; ringing in ears; slight nausea.	Well.
5	N. D.	30	F.	Domestic.	Third.	Mitral systolic murmur.	Mitral systolic murmur.	Subacute.	5	Iron and quinine, with relief.	53	Acid 3 days; headache.	"
6	J. S.	20	M.	Hat maker.	First.	Normal.	Normal.	Acute.	7	Acid 24 days, 30 grs. a day, with no relief. Alkalies and opium gave relief in 7 days.	41	Acid 23 days.	"
7	E. H.	35	M.	Agent.	Seventh.	"	"	Subacute.	4	Acid 1 day, with no relief, and vomiting. Alkalies 6 days, with relief.	22	Acid 7 days; convalescing on entrance; was well and helped in ward some time before discharge.	"
8	E. G.	39	M.	Druggist.	First. <sup>2</sup>	"	"	Acute.	61	Relief in 1 day; complete in 7 days.	30	Acid 38 days; subacute symptoms returned for 8 days after a relapse because of excessive stimulation; tonic and opium.	Nearly well.
9	L. D.	21	M.	Laborer.	"	"	Heart irregular. Mitral systolic murmur.	"	5	Complete relief in 1 day.	19	Acid 13 days; slight recurrence of symptoms.	Well.
10	B. E.	34	F.	Housewife.	"	"	Normal.	"	7	Complete relief in 1 day.	13	(1.) Acid 2 days.	Well of Rheumatism.
11	B. E.	24	F.	"	Second.	"	"	"	7	(2.) Relief in 2 days; complete in 8 days.	30	(2.) Acid 8 days; recurrence; well - marked coincident pithiasis; tonic, etc.	Well.
12	J. B.	25	F.	Domestic.	"	"	"	Subacute.	14	Relief in 1 day; complete in 6 days.	8	Acid 4 days; severe case; rapid recovery.	"
13	W. H.	35	M.	Wheelwright.	"	"	"	Acute.	15	Complete relief in 1 day.	11	Acid 12 days; mild case.	"
14	J. C.	39	M.	Longshoreman.	First.	"	"	Subacute.	20	Relief in 1 day; complete in 2 days.	12		

<sup>1</sup> Family rheumatic.<sup>2</sup> 25 days after beginning acid.<sup>3</sup> Family rheumatic.<sup>4</sup> 19 after acid. <sup>5</sup> Family rheumatic.<sup>6</sup> Figures in parentheses denote relapse.

CASES TREATED WITH SALICYLIC ACID, IN WHICH THE HEART WAS EXAMINED AND ITS CONDITION RECORDED (Continued).

NUMBER	NAME	AGE	SEX	OCCUPATION	NUMBER OF ATTACK	STATE OF HEART AT ENTRANCE	STATE OF HEART WHILE IN HOSPITAL, AND AT DISCHARGE	KIND OF ATTACK	DAYS SINCE LAST ATTACK	TIME TO RELIEF, AND AMOUNT OF ACID	DATE IN HOSPITAL	REMARKS	CONDITION, OR DISCHARGE
16	M. R.	22	M.	Gas fitter.	Second.	Normal.	"Normal.	Acute.	6	Relief in 1 day; complete in 3 days.	11	Acid 10 days.	Well.
16	J. W.	44	F.	Domestic.	"	"	"	Subacute.	21	Complete relief in 2 days.	17	Acid 15 days; mild case.	"
17	J. C.	26	M.	Laborer.	First.	Mitral systolic	Murmur more distinct.	Acute.	21	Complete in 2 days; complete in 4 days.	18	Acid 8 days; myxoedematous symptoms; quinine.	"
18	J. D.	30	M.	Engraver.	Third.	Aortic valve normal. Mitral systolic murmur.	Heart rapid; aortic normal; mitral systolic murmur.	"	6	Salicine 3 days, with little permanent relief; relief after 80 grs. acid.	5	Acid 2 days; cerebral symptoms; sudden great rise of temperature; death. Reported in full in JOURNAL, August 6, 1876.	Dead.]
19	M. F.	34	F.	Housewife.	First.	Not examined.	Mitral systolic murmur.	"	28	(1.) Relief from 12 doses. (2.) Relief from 8 doses.	45	(1.) Acid 2 days, 210 grains: ringing in ears. (2.) Acid 1 day; slight recurrence of rheumatoid arthritis of wrist-joint, and of knee-joint.	Relieved.
20	F. M.	32	F.	"	"	Normal.	Normal.	"	8	Relief in one day.	35	Acid 2 days; pregnant; acid caused nausea and vomiting, and was therefore omitted; tendency to chronic swelling in feet.	Well.
21	C. H.	33	M.	Teamster.	"	"	"	"	28	(1.) Relief in 1 day, 150 grs.; complete in 2 days. (2.) Relief in 1 day, 150 grs.	13	(1.) Acid 4 days, 400 grains: tinnitus aurium. (2.) Acid 2 days; no nausea.	Well.
22	C. P.	38	F.	Housewife.	"	"	"	"	28	(1.) Relief in 1 day; complete in 2 days. (2.) Relief in 2 days; complete in 3 days. (3.) Relief in 2 days. Became chronic.	"	(1.) Acid 3 days, grains 370; tinnitus aurium. (2.) Acid 4 days, grains 400. (3.) Acid 8 days, grains 150: chronic arthritis of ankle-joint; tonsils, etc.	Well of rheumatism.
23	M. C.	18	F.	Weaver.	Third.	Enlarged; cardiac distress; loud mitral; systolic murmur.	Same at discharge.	Chronic, with acute attack.	Chronic, with acute attack; acute 3 days.	Relief in 1 day; complete in 4 days.	60	Acid 1 day, 200 grains: nausea, vomiting, ringing in ears, acute attack of rheumatism, which persisted two days after cessation of acid; patient much debilitated.	Well of rheumatism.
24	D. G.	20	F.	Domestic.	"	"Normal.	Normal.	Acute.	14	Complete relief in 2 days.	7	Acid 2 days; very slight return of pain.	Well.



26	H. R.	21	F.	Domestic.	First. <sup>2</sup>	Pain over pre- cordial heart weak; heart normal; dys- pnea.	Soft mitral sys- tolic murmur.	Acute.	10	Relief in 1 day; complete in 2 days.	17	Acid 3 days; tonic.	Well.
26	M. W.	24	F.	"	Second.	Normal.	Normal.	"	7	(1.) Relief in 2 days; complete in 24 days. (2.) Relief in 2 days. (3.) Relief in 2 days.	60	(1.) Acid 2½ days, 300 grains; ringing in ears. (2.) Acid 2 days, 210 grains; no relief. (3.) Acid 3 days; no head- ache; epistaxis. Afterward chron- ic; erysipelas in knee. Acid 30 hours; ringing in ears; nausea; 24 days after entrance got out of bed and exerted himself, causing vio- lent palpitation, dyspnea, bloody sputum, and death.	Relieved.
27	J. A.	16	M.	Newboy.	First.	Loud mitral systolic mur- mur; dyspnea.	Third day, per- icardial fric- tion all over heart; twenty- first day gone; heart weak; complete re- covery.	"	5	Relief after 8 doses; complete after 12 doses.	24	"	Dead.
28	M. K.	22	M.	Plumber.	"	Normal.	Normal.	"	5	Relief after 12 doses; complete after 24 in 30 hours.	6	"	Well.
29	S. S.	13	F.	Domestic.	"	Blowing sys- tolic murmur at apex.	Same at dis- charge.	"	4	Relief in 15 hours, 125 grs.; complete in 1½ days.	21	"	"
30	J. I.	34	M.	Car driver.	Fourth.	Normal.	Normal.	"	7	Relief in 1 day, 160 grs.; com- plete in 27 hours; 25 doses.	19	"	"
31	C. G.	25	F.	Domestic.	First.	"	"	"	7	Relief after 16 doses, 160 grs.; complete relief in 3½ hours.	39	"	Relieved.
32	B. C.	46	M.	Junk dealer.	Second.	"	"	"	8	Relief in 17 hours, 170 grs.; complete in 27 hours.	31	"	Well.
33	J. G.	19	M.	Plumber.	"	Not examined.	Acute systolic murmur; 11 days before dis- charge.	"	4	Complete relief in 3 days.	24	"	"
34	M. C.	22	M.	"	"	Normal.	Normal.	"	5	Relief in 2 days; complete in 4 days.	11	"	"
35	M. G.	29	F.	Housewife.	"	Heart tumu- lous; double mitral murmur.	Double mitral murmur.	"	25	Relief in 1 day; complete in 3 days.	3	"	"
36	L. M.	20	F.	Domestic.	First.	Normal.	Normal.	"	14	Complete relief in 2 days.	63	"	Relieved.

\* 34 before attack, 26 after.

Relieved.

Acid 5 days;  
Acid 3 days; improving on  
entrance.  
Acid 6 days; disease became  
chronic; wrist-joint affected.

CASES TREATED WITH SALICYLIC ACID, IN WHICH THE HEART WAS EXAMINED AND ITS CONDITION RECORDED (Continued).

NUMBER	NAME	AGE	SEX	OCCUPATION	NUMBER OF ATTACK	STATE OF HEART AT ENTRANCE	STATE OF HEART WHEN IN HOSPITAL, AND FORECAST AT DISCHARGE	KIND OF ATTACK	DAYS SINCE RE-TRANCE	TIME TO RELIEF, AND AMOUNT OF ACID	DAYS IN HOSPITAL	REMARKS DAYS UNDER TREATMENT, WHOLE AMOUNT, ETC.	CONDITION ON DISCHARGE
37	R. F.	35	M.	Walter.	Seventh.	Normal.	Normal.	Acute.	6	(1.) Relief in 1 day, 150 grs.; complete in 2 days. (2.) Complete relief in 1 day. (3.) Complete relief in 3 days. (4.) Complete relief in 3 days. (5.) Complete relief in 3 days. (6.) Complete relief in 4 days.	43	(1.) Acid 2 days, 370 grains; slight deafness and ringing in ears. (2.) Acid 1 day, 170 grains; in intervals ammonia and soda, with no effect. (3.) Acid 3 days, 330 grains. (4.) Acid 3 days, 330 grains; no effect. (5.) Acid 3 days, 320 grains. (6.) Acid 10 days, 940 grains; slight nausea; ringing in ears. Total amount taken, 2250 grains.	Well.
38	J. W.	31	M.	Shoemaker.	Second.	Roughening of first sound at apex.	Heart tunnit; murmur at apex; shortness at discharge alone remained.	"	21	Relief after 8 doses; renewed after, but the mental condition and the effect on pain is not known.	60	(1.) Acid 3 days; was renewed twice; delirious the day after making diet; temperature 101°; acid 3 days; temperature 101°; came dry; low, muttering delirium; carphologia; temperature remained from normal to 101° to 102° for a month; slow convalescence. Acid 32 hours; slight nausea with first few doses; tonics.	"
39	J. S.	21	M.	Marketman.	First.	Blowing systolic murmur at apex; edema of disc trouble.	Blowing systolic murmur at apex; edema of disc trouble.	"	21	Relief after 12 doses, 120 grs.; complete in 22 hours.	7	"	"
40	I. K.	19	M.	Polisher.	Second.	Heart rapid; valvular quality not well marked.	Systolic murmur at apex; normal at discharge.	"	2	(1.) Relief in 2 days; complete in 3 days. (2.) Complete relief in 1 day.	21	(1.) Acid 3 days, 206 grains. (2.) Acid 2 days; fleeting pains between attacks; pneumonia of right lower lobe.	"
41	H. S.	22	F.	Domestic.	"	Normal.	Normal.	Chiefly muscular.	21	Relief in 1 day; in 3 days had an attack.	14	Acid 3 days, 146 grains; nausea, deafness, ringing in ears; iron.	"
42	C. O. R.	49	F.	"	First.	"	"	"	5	Relief in 1 day, 130 grs.; complete in 5 days.	31	Acid 3 days, 213 grains; nausea, ringing in ears, deafness, hoarseness, occasional fleeting pains.	"
43	W. F.	43	M.	Carpenter.	Second.	"	"	"	21	Relief in 1 day; complete in 3 days.	23	Acid 3 days, 250 grains; shoulder remained stiff; treated by electricity and friction.	"



CASES TREATED WITH SALICYLIC ACID, IN WHICH THE HEART WAS EXAMINED AND ITS CONDITION RECORDED (Continued).

NUMBER	NAME	AGE	SEX	OCCUPATION	NUMBER OF ATTACK	STATE OF HEART AT ENTRANCE	STATE OF HEART WHILE IN HOSPITAL, AND AT DISCHARGE	KIND OF ATTACK	DATE SORE BEFORE ENTRANCE	TIME TO RELIEF, AND AMOUNT OF ACID	DAYS IN HOSPITAL	REMARKS	CONDITION ON DISCHARGE
56	M. M.	19	F.	Domestic.	First.	Palpitation with precordial pain before entrance; none after; no murmur.	Normal.	Acute.	10	(1.) Relief 16 doses, 180 grs.; complete relief in 3 days, 270 grs. (2.) Complete relief in 1 day, 100 grs. (3.) Complete relief in 1 day. Relief in 1 day, 180 grs.; complete in 2 days.	17	(1.) Acid 5 days. (2.) Acid 1 day. (3.) Acid 5 days. Acid 31 days; chronic synovitis of knee; tinct. iodine and blisters locally; potass. iodid.	Well.
57	W. C.	30	M.	Sailor.	Second.	Not examined.	Slight prolongation of aortic systolic sound; pain over precordium; normal at discharge.	"	2		53		"
58	F. C.	27	F.	Housewife.	"	Mitral systolic sound prolonged; aortic sounds, faint.	Normal.	"	2	Relief in 1 day.	8	Acid 2 days; salicin 6 days; severe uterine hemorrhage; subacute pain in shoulder remained.	Relieved.
59	M. M.	16	F.	Domestic.	First.	Not examined.	"	"	14	Acid 1 day, with relief; complete relief in 2 days.	4	Acid 2 days.	"
60	F. G.	30	F.	"	"	Heart irregular.	"	Subacute.	21	(1.) Relief in 3 days; complete in 4 days. (2.) Relief in 2 days.	12	(1.) Acid 4 days. (2.) Acid 2 days; slight return.	Well.
61	E. L.	40	F.	"	"	Heart irregular and intermittent.	"	Acute.	11	Relief in 2 days.	11	Acid 2 days; delirious after taking acid one day; alcoholismus; subacute pain in knee at discharge. Acid 3 days, 320 grains.	Relieved.
62	M. D.	22	M.	Laborer.	"	Mitral systolic murmur.	Same at discharge.	"	4	Relief in 1 day; complete in 2 days.	13	Acid 5 days; pneumonia.	Well.
63	B. C.	42	M.	"	"	Normal.	Normal.	"	14	Relief in 1 day; complete in 6 days.	14		"

CASES TREATED BY SALICYLIC ACID, IN WHICH THE CONDITION OF THE HEART WAS NOT RECORDED

NUMBER	NAME	AGE	SEX	OCCUPATION	NUMBER OF ATTACK.	KIND OF ATTACK.	DAYS SINCE ONSET OF ATTACK.	TIME TO RELIEF, AND AMOUNT OF ACID.	DAYS IN HOSPITAL.	REMARKS: DAYS UNDER TREATMENT; WHOLE AMOUNT OF ACID TAKEN, ETC.	CONDITION ON DISCHARGE.
64	H. F.	25	M.	Brakeman.	Third. <sup>1</sup>	Subacute.	9	Acid 8 hours, with relief.	82*	Acid 16 days; alkaline treatment 20 days previously, with partial relief; acid caused slight nausea; iritis.	Well.
65	D. C.	24	M.	Laborer.	First. <sup>2</sup>	Acute.	14	Alkaline treatment 3 days, with some relief; acid one day, free from pain.	21 <sup>4</sup>	Acid 5 days; ringing in ears; deafness.	"
66	A. B.	36	M.	Painter.	Fifth.	Subacute.	4	Relief in 2 hours.	12	Acid 3 days; some nausea and headache.	"
67	K. H.	23	F.	Domestic.	First.	Acute.	3	Complete relief in 3 days.	22	Acid nine days; nausea; headache.	"
68	F. D.	19	F.	"	"	Subacute.	4	Relief in 1 day; complete in 5 days.	7	Acid 7 days.	"
69	S. B.	27	M.	Cigar maker.	"	Acute.	3	Complete relief in 3 days.	27	Acid 14 days; slight return of pain; stayed in hospital for three and one-half weeks.	"
70	J. W.	43	M.	Longshoreman.	"Several" before.	Subacute.	5	Relief in 3 days.	37	Acid 21 days; continued swelling after acute stage; thirst; itching, blisters.	"
71	J. C.	60	M.	Painter.	Third.	Acute.	14	Complete relief in 5 days.	17	Acid 6 days; improving on entrance.	"
72	W. C.	57	F.	Domestic.	Second.	Subacute.	30	Relief in 2 days; complete relief in 3 days.	35	Acid 3 days; tendency to become chronic.	"
73	J. S.	38	M.	Clerk.	"	Acute.	20	Complete relief in 4 days.	33	Acid 15 days; caught cold; slight recurrent attack.	"
74	E. S.	46	F.	Domestic.	"	Acute.	7	Complete relief in 2 days.	14	Acid 4 days.	"
75	M. L.	54	M.	Laborer.	First.	"	6	Relief in 1 day; complete in 5 days.	11	Acid 8 days.	"
76	M. A.	22	F.	Domestic.	Second.	"	6	Complete relief in 2 days.	13	Acid 5 days; persistent slight pain in shoulder; no swelling; vomiting.	"
77	M. L.	30	M.	Painter.	"	"	More or less for 60	Relief in 2 days.	24	Acid 8 days; severe attack.	Relieved.
78	J. C.	35	M.	Laborer.	First.	"	60	Relief in 3 days.	23	Acid 5 days; occasional intermittent pain after; much headache; slight nausea.	Well.
79	J. M.	30	M.	"	"	Subacute.	90	Relief in 1 day; complete in 15.	23	Acid 15 days; mild case.	"
80	F. C.	33	M.	"	Second.	Acute.	14	Relief in 1 day; complete in 2 days.	15	Acid 12 days.	"
81	H. K.	28	M.	"	Third.	"	3	Complete relief in 2 days.	7	Acid 7 days; small dose.	"
82	J. B.	18	M.	Brass finisher.	First.	Subacute.	14	Complete relief in 4 days.	86	Acid 5 days; greatly debilitated; stayed in hospital for treatment; tonsils.	"
83	E. G.	38	M.	Laborer.	Second.	Acute.	3	Relief in 1 day; complete in 2 days.	18	Acid 4 days; slight return in left hip; iron and cod-liver oil.	"
84	F. F.	30	M.	"	First.	General pain.	60	Relief in 8 days.	23	Acid 6 days; tonsils.	"
85	M. A.	22	F.	Domestic.	Second.	Subacute.	4	Complete relief in 1 day.	14	Acid 9 days.	"
86	M. A.	22	F.	"	Third.	Acute.	4	Relief 1 day; complete in 2 days.	10	Acid 5 days; tonsils, iron and quinine.	"
87	J. C.	61	M.	Laborer.	"	"	4	Relief in 2 days; complete.	9	Acid 5 days.	"
88	F. S.	43	M.	Teamster.	First.	Subacute.	6	Relief in 3 days; complete in 4 days.	7	Acid 3 days; mild case.	"
89	F. S.	21	M.	Nurse.	"	"	4	Complete relief in 1 day.	3	Acid 2 day; mild case.	"
90	M. E.	61	F.	Landlady.	Many before.	Acute.	3	Relief in 1 day; complete in 2 days.	19	Acid 8 days; debilitated.	"

\* Father died of heart disease.

18 after acid.

\* Mother died of heart disease.

\* 53 after acid.

\* Family rheumatic.

CASES TREATED BY SALICYLIC ACID, IN WHICH THE CONDITION OF THE HEART WAS NOT RECORDED (Continued).

NUMBER	NAME	AGE	SEX	OCCUPATION	NUMBER OF ATTACK	STATE OF HEART AT ENTRANCE	STATE OF HEART WHILE IN HOSPITAL, AND AT DISCHARGE	DAYS SICK BEFORE ENTRANCE	TIME TO RELIEF, AND AMOUNT OF ACID	DAYS IN HOSPITAL	REMARKS: DAYS UNDER TREATMENT, WHOLE AMOUNT OF ACID TAKEN.	CONDITION ON DISCHARGE
91	M. R.	19	F.	Domestic.	First.	Normal.	Normal.	28	(1.) Relief in 3 days. (2.) Complete relief in 6 days.	45	(1.) Acid 6 days. (2.) Slight recurrence; tendency to become chronic.	Well.
92	D. McC.	19	M.	Laborer.	Second.	Subacute.	Subacute.	23	Complete relief in 2 days.	25	Acid 9 days; slow convalescence; electricity.	"
93	M. F.	19	M.	Nursery girl.	First.	Acute.	Acute.	14	Relief in 1 day; complete in 2 days.	23	Acid 4 days; mild case.	"
94	M. F.	13	F.	"	Second.	Acute.	Acute.	2	Complete relief in 2 days.	14	Acid 14 days.	"
95	M. F.	13	F.	Laborer.	"	Subacute.	Subacute.	1	Relief in 1 day; complete in 3 days.	16	Acid 5 days.	"
96	E. G.	38	M.	Housewife.	First.	Acute.	Acute.	1	Salicine 2 days, 250 grains; slight relief; acid gave complete relief in 2 days.	10	Acid 10 days; chronic stiffness and slight pain on motion remained; no more relapsing pain.	Nearly well.
97	E. S.	30	F.	"	"	Subacute.	Subacute.	5	Acid 2 days, with complete relief.	24	Acid 4 days, 260 grains; slight nausea; mild case.	Well.
98	W. K.	26	M.	File-cutter.	Several before.	Acute.	Acute.	8	Relief in half a day, 166 grains; complete in 4 days; recurrence; acid 1 day; relief.	4	Acid 10 days, 880 grains; recurrence while under small doses; ringing in ears; deafness; headache.	"
99	M. F.	46	F.	Domestic.	First.	Acute.	Acute.	7	Relief; small doses 3 days.	21	Acid 3 days; mild case.	"
100	J. P.	22	F.	"	Second.	Subacute.	Subacute.	10	Complete relief in 3 days.	7	Acid 3 days; tendency to chronic swelling.	"
101	H. J.	28	M.	Carpenter.	First.	Acute.	Acute.	14	Relief in 18 hours; complete relief in 3 days.	21	Acid 3 days; occasional fleeting pains; thin, thin, thin.	"
102	M. M.	43	F.	Domestic.	"	"	"	4	(1.) Relief in 18 hours; complete in 2 days. (2.) Complete relief in 4 days of acute symptoms.	23	Acid 2 days.	Believed.
103	N. H.	22	F.	"	"	"	"	16	Complete relief in one day.	70	Acid 6 days; tonics, iodine, alkalies.	Well.
104	S. B.	53	M.	Blacksmith.	"	Subacute.	Subacute.	5	Relief in 1 one day; complete in 3 days.	11	Acid 5 days.	"
105	C. C.	53	F.	Domestic.	"	Acute.	Acute.	6	Relief in 2 days; complete in 3 days.	6	Acid 5 days.	"

## CASES TREATED BY SALICINE.

NUMBER	NAME	AGE	SEX	OCCUPATION	NUMBER OF ATTACK	STATE OF HEART AT ENTRANCE	STATE OF HEART WHILE IN HOSPITAL, AND AT DISCHARGE	DAYS SICK BEFORE ENTRANCE	TIME TO RELIEF, AND AMOUNT OF SALICINE	DAYS IN HOSPITAL	REMARKS: DAYS UNDER TREATMENT, WHOLE AMOUNT, ETC.	CONDITION ON DISCHARGE
107	P. M.	25	M.	Plasterer.	First.	Normal.	Normal.	7	Relief in 1 day, 120 grains; complete relief in 5 days.	7	Salicine 7 days; appetite improved while under treatment.	Well.
108	D. S.	19	M.	Lithographer.	Second.	Normal.	Normal.	5	Relief in 2 days, 370 grains; complete relief in 5 days.	9	Salicine 7 days, 1240 grains; excellent appetite when pain subsided.	Well.
109	E. McM.	23	F.	Cook.	First.	Normal.	Normal.	21	(1.) Relief in 4 days, 620 grains; complete in 9 days. (2.) Recurrence; relief in 4 days.	24	(1.) Salicine 9 days. (2.) Salicine 7 days.	Well.

\* Mother rheumatic; father died of heart disease.

Delirium occurred in three cases, one possibly being delirium tremens. Was the delirium in the others caused by salicylic acid?

Nearly all of the cases in which nervous symptoms were manifested were those of persons in poor physical condition.

Pneumonia occurred in three cases; iritis, synovitis, herpes labialis, purpura, uterine hæmorrhage, sore throat, and conjunctivitis complicated one case each.

The universal result of the acid, when given in full doses, in acute cases was to cause a fall of temperature, but never much below the normal point. The effect on the pulse and respiration was less marked, as they usually fell less rapidly. The pulse rate often increased for a time in weak or debilitated subjects.

Experience has shown that the acid is much better adapted to acute than to other varieties of rheumatism. The following record of actual cases of acute rheumatism, treated by ten-grain doses hourly, is a fair example of the effect on pulse, temperature, and respiration.

(1.) Acid begun at six P. M. day of entrance. P. M. P. 120, T. 102.2°, R. 32. A. M. P. 96, T. 98°, R. 26. P. M. P. 98, T. 98.7°, R. 28.

(2.) Acid begun at one P. M. P. 100, T. 103.2°, R. 28. A. M. P. 92, T. 99.8°, R. 24. P. M. P. 88, T. 99°, R. 24.

(3.) Acid begun at six P. M. P. 116, T. 103.8°, R. 28. A. M. P. 124, T. 100.6°, R. 28. P. M. P. 112, T. 99.4°, R. 24. Most patients perspired freely, a few profusely, while under treatment, but there were no cases of collapse or even of marked prostration.

The case whose temperature is given last was a poorly fed, debilitated subject, who took ten grains of the acid for twenty-seven consecutive hours. There was tinnitus aurium, deafness, very profuse perspiration, which continued several hours after the omission of treatment, and a sense of general weakness. This was the most marked case of prostration, but the patient soon rallied from it.

Case 37 is remarkable for the number of relapses and the amount of acid taken. The patient was a large robust Englishman, otherwise in vigorous health. While under treatment for the first attack there was slight deafness and ringing in the ears. With the last relapse there were similar symptoms and slight nausea. There were no other unpleasant symptoms and the appetite was excellent throughout.

Many cases were left in a poor general condition after treatment, with more or less complete loss of appetite; to recover from this state often required more time than to produce a cure of the rheumatic symptoms.

The patients were usually placed upon treatment by the house physician soon after entrance, the common dose being ten grains every hour while awake, for twelve to thirty-six hours, when the symptoms



were wholly or partially relieved. Then the practice has varied, the acid being omitted altogether or reduced to ten grains every two or three hours for a time, to be again reduced and finally omitted in from ten days upward. Usually no opiates were given and no attention was paid to the condition of the bowels. The acid was first taken in wafers, but it occasionally happened that an awkward patient would break one in his mouth and release the pungent acid, producing very unpleasant sensations and perhaps a refusal to take any more. A substitute was found, in the service of Dr. Blake, in pills made with honey or molasses, containing  $3\frac{1}{2}$  grains each, about the [size of a compound cathartic pill. They have been much more satisfactory and have been almost exclusively used since. The various solvents, soda and ammonia salts, glycerine, etc., have been but little used.

The number of cases treated with salicine is too small to base any definite conclusion upon as regards its value when compared with salicylic acid or any other method of treatment. It certainly acts more slowly than the acid. It has been used in six cases during part of the treatment and in three during the whole. The dose varied from five to fifteen grains per hour, and was taken with no bad effect; in fact, those who took it throughout had excellent appetites and made a rapid and thorough convalescence, instead of being left in a generally poor condition with no appetite, as was too often the case with those treated with salicylic acid. Of the six cases who did not take salicine continuously until recovery, four were relieved, and two were not relieved after taking it from two to four days. The three cases who took it throughout were acute, of moderate severity. The heart was normal in all. The average time to relief was  $2\frac{1}{2}$  days; to complete relief,  $6\frac{1}{2}$  days; the average amount taken was  $346\frac{2}{3}$  grains, ten grains every hour. The average time in hospital was  $13\frac{1}{2}$  days. There was relapse in one case. Because of its better general effect on the patient, salicine seems to merit a more extended trial.

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#### CASE OF CEREBRAL SOFTENING.

BY A. W. BACHELER, M. D., MIDNAPORE, INDIA.

JOGA SANTAL, a prisoner sentenced for a term of ten years, for robbery, seven years of which had expired, was admitted into the jail hospital at Midnapore, April 2, 1876, for general debility. I copy a few entries from the bedside record.

"April 29th, had fever. Appetite bad.

"April 30th. Had a slight fit.

"May 5th. Unable to walk. Had four fits.

"May 12th. To this date fever, with three or four fits daily. At this time complained of pain in the neck and lower portion of head.

"May 16th. Pain in neck continues, but no fits since last date.

"May 30th. Partial paralysis of nerves of motion in left leg and arm.

"June 12th. Pain in head and neck and paralysis much the same."

I saw this patient frequently during the three months of his illness, and made repeated and careful examinations. When lying on his cot he appeared in comparative health, and complained of little or no pain. On being raised on to his feet he would begin to tremble, and after a few seconds would become insensible. Usually, however, if placed immediately on his cot, the disturbance passed off in a few minutes. He gradually grew weaker, became somewhat emaciated, but with no important change of symptoms, and died August 23d. I learned after his death that during the last two days of his life there had been slight paralysis of the nerves of sensation in the left leg and arm. Disease of the cerebellum was diagnosed, and the treatment adopted was a seton to the neck, the galvanic battery, iodide and bromide of potassium, strychnine, and general tonics. The case was one of unusual interest on account of the obscurity of the symptoms.

*Autopsy.* — A strong, muscular man of about thirty years of age. The base of each lung was thickly studded with tuberculous deposits. Ulceration progressing. Cavities throughout these portions varying from one eighth of an inch to an inch in diameter; at least twenty or more. By estimate, thirty-two ounces of bloody matter were found in the thoracic cavity. On opening the head about sixteen ounces of serum were found in the cavity of the brain. External appearance of brain normal. Cerebellum softened throughout. At its central base, just beneath the medulla oblongata, but not involving it, was found a hard lump of the size of a small hen's-egg, which when laid open showed a consolidation of brain substance of cheese-like consistence and of a yellowish color. Medulla oblongata softened. Spinal marrow for three inches completely disorganized, only a few shreds remaining, the softer portions having oozed out during dissection; thence for twelve inches softened, and the remaining portion congested.

The interesting features of this case are: (1.) That such extensive disease of the lungs could exist with the absence of all the ordinary symptoms of phthisis. No pain in the chest had ever been complained of, and no unusual expectoration or cough had been noticed.

(2.) That such extensive disorganization of the cerebellum and spinal marrow should have caused so slight paralysis of the motor nerves, and, until near the last, no perceptible paralysis of the nerves of sensation.

(3.) As the entire cerebellum was involved in the disease, why was the paralysis on one side only?

It is but just to state that the patient was a common coolie, a well-developed gorilla, with a nervous system not at all delicate.

MIDNAPORE, December 1, 1876.

RECENT PROGRESS IN THE TREATMENT OF CHILDREN'S DISEASES.<sup>1</sup>

BY D. H. HAYDEN, M. D.

*Intussusception.* — At the meeting of the Berlin Medical Society, held May 3, 1876,<sup>2</sup> Herr Senator reported a case of invagination of the lowest portion of the intestine in a boy three months old. The invaginated part could be felt by the finger introduced into the rectum. Replacement was easily effected, but the invagination would immediately return, for which reason after each reposition long-continued injections of water or of air were used, and later a rectal bougie was introduced and allowed to remain until expelled by an operation of the bowels. After each reposition the child's condition improved, but with the return of the invagination again became worse, and during the first three days that the child was under observation there was vomiting of fecal matter. On the fourth day there was distention of the abdomen, with tenderness on pressure, and the temperature reached 102° F. The treatment for these symptoms consisted of compresses of ice-water over the abdomen, which were used with good effect. Reposition was made for the last time on the fourteenth day of the disease. Eight days afterwards the child was discharged, well, and during the several weeks that have since elapsed he remains in perfect health.

Herr Henoch remarked that this case was illustrative of what we know by experience, namely, that in earliest infancy invaginations rarely cause the formation of adhesions, and therefore that such cases were apparently suitable for attempts at reposition. He considered such manipulations, however, accompanied with great danger, and thought that it was a question if it were not better to act on the *ne quid nimis* principle, and trust to the ice-and-opium treatment which keeps the intestine quiet and favors the formation of adhesions and the subsequent separation of the invaginated portion. In the case reported the possibility of such adhesion and separation seemed very good, as there were bloody discharges every time the reposition was discontinued. These bloody discharges are due to venous stagnation caused by the intussusception, and after these have made their appearance necrosis and separation could easily follow. Although in Herr Senator's case recovery took place, symptoms of diffuse peritonitis, which is an especially fatal accident in infant life, made their appearance during the course of the disease.

Herr Senator did not agree with Henoch as to the treatment of this disease in infants, and considered the first duty in such cases to be the attempt to reduce the invagination. One must naturally be sure of the

<sup>1</sup> Concluded from page 139.<sup>2</sup> *Berliner klinische Wochenschrift*, August 28, 1876.

diagnosis, and must proceed with the greatest care and delicacy. The ice-and-opium treatment is rightly the most approved method with adults, since with them the invagination is rarely situated deep down, as is the case with infants, and for this reason diagnosis and reposition are both more difficult. In spite of the ice-and-opium treatment death often takes place, and the fear of rupturing adhesions that may have formed should not deter us from attempting replacement. When the invagination continues without replacement, peritonitis and gangrene always ensue, which is far more dangerous than a peritonitis that may be set up after a replacement, and often there is no peritonitis at all. Reposition, therefore, should always be resorted to when practicable, and is a far more rational method of treatment than to leave the disease to nature. In the case reported the speaker did not consider that there was a veritable peritonitis, but the symptoms were simply those of irritation, and there were no adhesions formed. He believed, in fact, that by reposition peritonitis was prevented, and considered it very doubtful if, when adhesions to any extent were formed, reposition could be effected.

Herr Fränkel considered the indication of first importance in intussusception, as in strangulated hernia and in typhilitis stercoralis, to be the removal of the cause. As soon, however, as peritonitis or irritation of the peritoneum has made its appearance, we should desist and rely entirely on opium.

Herr E. Küster and Herr Baginsky agreed with the views expressed by Herr Senator, the former considering that careful attempts at reposition should be made, even if there existed symptoms of peritoneal irritation.

*Iodine and its Preparations in the Therapeutics of Infancy.*—In a clinical lecture delivered at the Paris Hospital for Children, M. Jules Simon<sup>1</sup> lays particular stress upon the following points: Tincture of iodine should not be applied pure in tubercular children; it should be diluted either with glycerine or with some unguent. Neither iodide of potassium nor iodide of iron should be given to children under two years of age, except perhaps in cases of acute hereditary syphilis, where small doses may be administered. It may be given to the nurse if the child have not been weaned. Older children bear the drug well. Those who are especially benefited by it are patients robust in appearance, but with soft, inelastic flesh, and with manifestations of incipient scrofula. Iodoform is of great service in cases of ozena and scrofulous wounds. Albuminuria has been observed by M. Simon in a large number of cases to follow paintings of the surface with tincture of iodine especially when it is applied to eruptions. Iodide of potassium produced the same result, but in a smaller degree. Under this head further investigations are promised.

<sup>1</sup> *Moniteur thérapeutique*, August 7th. *London Medical Record*, November 15, 1876.

*Observations on the Dietetics of Infants.*—Dr. Franz Peters<sup>1</sup> gives the results of the methods adopted in bringing up children at a foundling asylum established in Bonn in 1873. The institution was under the direction of Professor Binz. In the first year, owing to unfavorable circumstances, the mortality was sixty per cent., but in the second year, when a suitable house had been procured, there were but nine per cent. of deaths, a striking result in view of the fact that the children were necessarily brought up by hand, and that the condition of many of them at entrance was very poor. The food was artificial in all cases except when, during the first few weeks, the mother's milk was accessible. The objections to cow's milk are fully stated, and the following table is given to show the essential differences between human milk and cow's milk in 1000 parts:—

	Human Milk.	Cow's Milk.
Casein	28.11	54.03
Fat	35.64	53.05
Lactose	48.17	40.37
Salts	2.42	5.48
Water	885.66	857.05

Beside the difference in quantity the casein of cow's milk has different chemical properties from that of the mother's milk. The experiments of Biedert, in 1869, are referred to. He pointed out that the human casein was neutral or slightly alkaline, whereas the cow casein had an acid reaction; further, that the former was easily soluble and the latter quite insoluble in water; that artificial gastric juice, dilute mineral acids, wine, milk, etc., dissolved the human casein more or less easily, while the cow casein remained insoluble or dissolved under certain conditions only; and finally, as was shown by experiments, that the human casein was digested in a considerably shorter time than the other. Dr. Langgard<sup>2</sup> confirmed these statements. It is also said that the casein of human milk coagulates in loose, fine flakes, the cow casein in large, clumpy, adherent masses, which the infant's gastric juice penetrates with difficulty. Therefore they may remain long undigested, and, through mechanical irritation, may easily cause vomiting. The less firm coagula of the human casein are much more digestible. The great similarity between the chemical properties of human casein and that of mare's milk is noticed by the author, but as the latter is rarely available, he concludes that, in spite of the digestive disturbances which often arise, cow's milk, properly diluted and prepared, must remain the common substitute for the natural nourishment of sucklings.

In the asylum at Bonn condensed milk from Switzerland was found to possess advantages over fresh cow's milk, without being in any way inferior in point of nutritious qualities. The Swiss animals, which pass much of the time in the open air, were thought to give milk of better

<sup>1</sup> Jahrbuch für Kinderheilkunde, Band x. 314.

<sup>2</sup> Virchow's Archiv, Band lxx. Heft i.

quality than cows shut up in narrow, dark, ill-ventilated stalls, and the condensed milk was found to be less liable to spoil than ordinary milk, even if exposed for a considerable time to the action of the air, since the fermentation corpuscles do not penetrate the consistent medium, or if mechanically mixed with the milk they do not further develop. The results bear out these suppositions to a great degree, as during the previous hot summer among twelve children fed exclusively on condensed milk there was no digestive disturbance of importance, a fact more noticeable when it is considered that many of them had been neglected and were in a bad state of nutrition on entrance. One portion of condensed milk to twenty-two of water was given during the first three months; from then until the eighth month one part to eighteen, and later one part to twelve.

There was an objection to the use of condensed milk alone, namely, a deterioration of the bones as in a slight degree of rachitis. This symptom was observed in almost all the children, even in those who were otherwise well nourished. The cause was sought in the food, and was thought to be due to the great amount of sugar in the condensed milk, which generated an excess of lactates, these in turn entering the circulation, and in accordance with their recognized property acting as solvents of the lime salts.

The preparation called "leguminose,"<sup>1</sup> which is probably nothing more than finely pulverized lentils, was found to counteract this tendency to bone degeneration as well as to improve the general nutrition of the children, inasmuch as it supplies the salts necessary to healthy bone formation. Leguminose was combined with the milk in the following manner: A tablespoonful of the meal was mixed with a pint of water and boiled half an hour, with the addition of a little salt. Of this soup children during the first three months took a tablespoonful with their milk daily, older children as much as four tablespoonfuls with each portion of milk, and it was thought that after a time the effect on the development of the bones was highly beneficial. The only objection to the leguminose was the high price, a mark and a half (about forty cents) a pound.

The good results attained in this institution are attributed by the author to the extreme care taken to prevent disturbances of digestion by the choice of a suitable form of nourishment, the greatest cleanliness in regard to the drinking vessels, regularity in feeding, and care that the children should have plenty of fresh air, both within and out of doors.

In simple dyspepsia, when the milk is regurgitated and the gastric juice seems to have lost its property of coagulating the casein, a condition which should be corrected before it leads to more serious disturbance, very dilute muriatic acid was found to act favorably, and as more

<sup>1</sup> See JOURNAL, xcv. 164.

serious gastric disturbances were also remedied by the same means the author thinks that they were often due to the absence of sufficient free acid in the gastric juice.

Gastro-intestinal catarrh, which is often so dangerous an affection in infants, was treated with gum arabic, one to two teaspoonfuls in half a pint of the preparation of condensed milk previously described. This was given immediately after the first symptoms of an attack, and was repeated with each portion of milk. In some instances the next discharge was rendered normal. The good effect was considered to be owing to the emollient action of the gum arabic upon the mucous membrane of the stomach and bowels, as well as to the mechanical covering supplied to the lining coat. It was also supposed to assist in dissolving the caseous coagula.

A daily bath of two or three minutes was given to all the children, the temperature of the water being at 26° R. (90.5° F.). The thermometer in the rectum showed that the temperature of the body was not affected thereby. This agrees with the experiments of Liebermeister, Kernig, Jürgensen, and others as to the effect of cool baths of moderate duration on healthy persons. The variation in temperature was never more than one tenth of a degree Centigrade.

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## THE BOSTON SOCIETY OF MEDICAL SCIENCES.

EXTRACTS FROM REPORT OF PROCEEDINGS FOR OCTOBER AND NOVEMBER, 1876.

JAMES J. PUTNAM, M. D., SECRETARY.

TUESDAY, October 30th. *Pain in Facial Paralysis.* — DR. WEBBER read a paper illustrated by diagrams upon the significance of pain as a concomitant symptom of facial paralysis. After referring to the fact that so little is to be found on this subject in the text-books, he said that in more than half the cases of facial paralysis which he had observed, pain had been present, though its exact seat had been noted in five cases only. In those the pain had been chiefly in and behind the ear and along the lower jaw; in one or two cases its distribution had been more general. He regarded it as possible that branches of the fifth pair might be affected in their bony canals, like those of the seventh, so as to cause pain and numbness, but, finding that the facial nerve is known to anastomose with the auricular branch of the pneumogastric, which traverses a canal in the mastoid bones, the idea had suggested itself that the same influence which causes the facial paralysis might implicate this auricular branch. This might happen even before the facial nerve was attacked, causing the pain to precede the loss of motion, or the two affections might even take place simultaneously. The auricular branch is distributed to the parts where the pain was felt in the cases reported, though in some of them there had also been pain in parts supplied by the fifth nerve.

In reply to Dr. Dwight, Dr. Webber said he believed the anastomosis referred to to be a constant one.



In answer to Dr. Fitz he said that there was no reason to regard this paralysis of the facial as rheumatic in the strict sense of the word, but that in many cases, at least, it was reasonable to suspect the presence of an inflammation of the nerve sheath, causing pressure on the nerve fibres, though no proof could be given of the fact.

DR. PUTNAM had seen a number of cases in which pain associated with tenderness on pressure had been present in various parts of the face, but especially along the side of the forehead at certain points; and he had believed these symptoms to be due to an inflammation of the sheaths of the terminal fibres of the facial nerve involving fibres of the fifth nerve, possibly those, if such exist, which ramify in the sheaths of the motor nerves. He had also recently seen a case belonging to the type of the moderately severe cases of facial paralysis, of so-called rheumatic origin, where the patient when asked to point out the parts where the pain was the severest touched in turn almost exactly the places at which the main branches of the fifth nerve leave their bony canals.

*Distribution of the Median and Ulnar Nerves.* — DR. PUTNAM showed two colored casts illustrating the position of the anæsthetic zone in a case of accidental section of the median and ulnar nerves at the wrist. The case had repeatedly been examined with care and the limits of the anæsthesia as mapped out corresponded to the condition of the patient several months after the accident. The sensibility of the entire palm was more or less impaired, though but very slightly so over an area bounded anteriorly by a line which corresponded almost precisely with the superficial palmar arch. This area must therefore have received its sensitive nerve supply either from cutaneous nerves given off from the brachial plexus or from branches of the median and ulnar given off above the seat of injury (palmaris ulnaris and medius). Beyond the line indicated the skin became rapidly insensible to the strongest excitations of every kind, the intervening zone, where touch alone was abolished, having a width of not more than one third of an inch. All the palmar surfaces, strictly speaking, of the fingers and the thumb were completely anæsthetic, except that the first phalanx of the little finger was partially sensitive, being apparently supplied in part by a branch of the dorsal division of the ulnar, which for other reasons was believed to have escaped section, namely, because the sensibility over the back and sides of the little finger was unimpaired. The radial nerve was found to supply the entire backs of the thumb and of the first two phalanxes of the index finger and the first phalanx of the two middle fingers.

The distribution of the median and ulnar to the fingers as thus ascertained was shown to agree strikingly with that laid down by Richelot as a result of his careful dissections. The fact that the limits of the anæsthesia in this and in certain other cases referred to were so exactly defined could not but suggest a doubt as to whether the observations of Arloing and Tripièr upon animals, which showed such an extensive overlapping of the areas of distribution of the different nerve territories, due to recurrent nerve fibres, are to be regarded as applicable with propriety to man.

DR. WEBBER referred to the great variations between different cases, as to the distribution of the median and ulnar nerves.

THE QUARTERLY JOURNAL OF INEBRIETY.<sup>1</sup>

THIS new and good-looking quarterly takes its place in the ranks of special journalism as the exponent of the American Association for the Cure of Inebriates. Its object is of vast social importance, and its welcome should be a cordial one. Its contents are chiefly the president's address, the proceedings of the association at its seventh annual meeting at Philadelphia last September, and a paper by Dr. George M. Beard on the Causes of the Increase of Inebriety in America, read at the same time and place.

Dr. Mason's address gives a sketch of the rise and present *status* of asylums devoted exclusively to the treatment and cure of inebriates. He is right in attempting to prove that inebriety is a disease, quoting largely from Dr. Rush as an early authority, since many are still disinclined to adopt this view. At the late church congress in this city, a New York physician advocated the punishment of all drunkards, as if drunkenness were always a vice. Habitual inebriety is, no doubt, usually a disease originating sometimes in the vice of intemperance, and sometimes in hereditary constitutional defect. The difficulty in dealing with it arises from the impossibility of demonstrating to what degree the inebriety is voluntary. It is the same difficulty which exists in partial insanity with its corollary, limited responsibility. Punishment is suited to the vice only, restraint to the disease, and when vice and disease coexist, as is often the case, it is hard to mete out a just measure of each to the individual.

The voluntary seclusion of a Washingtonian Home is well adapted to a certain proportion of cases of inebriety; the mistake of the advocates of this kind of treatment consists in thinking it applicable to all cases. To be sure, it is impossible to select such as will certainly be cured under the voluntary system, but after the best selection possible only thirty-three and one third per cent. of cures is claimed, and this is probably much too large. The great problem remains how to deal with the other two thirds, and what to do with the great army of common drunkards which never lacks recruits. Restraint of different kinds and degrees is suited to the different classes of inebriates. For many it seems that commitment by law to some institution having power to retain and control the patient for many months is necessary. Such commitment is especially required by the ignorant, vicious, and law-breaking inebriate, and also for the drunkard by inheritance, and the dipsomaniac with dangerous tendencies.

The association indorsed the resolutions adopted by the International Medical Congress, which affirm that alcohol has no definite food value, which approve of inebriate asylums, and denounce the commitment of inebriates to hospitals for the insane. If inebriety is a disease, as Dr. Mason and his associates claim, it certainly has all the characteristics of mental disease in many cases. If it is a disease, it must render the patient irresponsible for acts of violence done under its influence. There is a defect in the logic of these resolutions which arises from a partial and one-sided view.

Practically, not half a dozen cases of simple dipsomania are yearly committed

<sup>1</sup> *The Quarterly Journal of Inebriety*. December, 1876. Vol. I. No. 1.

to hospitals for the insane in this State, whatever may be the rule elsewhere. Although theoretically insane, there are reasons for the separate treatment of this class of patients, and but a few exceptional cases are ever sent to insane hospitals. If an institution with power to retain for a definite period existed, the number of "rounders" at Deer Island and the Washingtonian Home would be diminished. I believe the best treatment for a majority of confirmed inebriates to be prolonged detention, good food, plenty of work, and a helping hand at the time of discharge. *Work* I believe to be an essential in the treatment, and it should be made to some extent compulsory, as society has at least the right to the labor of the pauper class of inebriates, and this right coincides with their highest welfare. A work-house for common drunkards and a state asylum for inebriates of a special class are needed to complete the good work now only in part accomplished by our voluntary inebriate asylums. A commission has just been appointed by the mayor of Boston, consisting of Drs. Tyler and Shattuck and the Rev. Dr. Miner, which will no doubt make some wise recommendation on this subject.

Dr. Beard's paper asserts, and perhaps not without warrant, that inebriety as a vice is diminishing, while inebriety as a disease is increasing with the general increase of mental and nervous diseases, and from similar causes. As our advancing civilization imposes greater tasks on the brain than formerly, more and more individuals succumb to over-work and to attendant over-stimulation. To support this proposition he compares the higher and lower classes. The latter in their outward condition occupy a similar position to that of our ancestors of a hundred years ago. In proof that they are less subject to nervous disorders, Dr. Beard adduces his failure to establish a hospital for functional nervous disorders in connection with one of the large dispensaries of New York from lack of material. He mentions hay fever as a neurosis seldom seen among the poorer classes. The vice of inebriety he thinks prevails in the laboring class because, as Bulwer says, "it takes a strong constitution to be dissipated."

He compares also the present with a quarter or a half century ago, and presents the testimony of old physicians as to a change in the type of disease. Certain nervous affections, such as neuralgia and sick headache, were, he thinks, unknown by name or symptom seventy-five years ago. Our grandfathers could go all day with wet feet, or sit for hours in a cold church. A temperature of 60° was comfortable to them, while we require 70°. They digested pork with ease, which food is fast becoming obsolete with us. Opium put them to sleep while it keeps many of us awake. The number of those in the community who cannot use tea, coffee, or alcohol is very large, and nervous idiosyncrasies are increasing.

By comparing the present with the middle ages he draws similar conclusions, and the nervous constitution of the women of our day adds another argument to the list. He admits in opposition to this line of reasoning the fact that longevity increases with civilization, but thinks the two arguments are not irreconcilable, and he believes that evolution is gradually preparing a race fitted to survive.

Dr. Beard thinks that inebriety necessitates confinement of the patient in

some institution where alcoholic liquors cannot be obtained. This is not always the case under the voluntary system, if we can believe the testimony of Dr. Bucknill and that of discharged inmates. The possibility of getting liquor and the brief period of residence (usually four or five weeks only) prevent this system from being of use in cases of confirmed inebriety where the disease is chronic and perhaps hereditary. This freedom from restraint is at once the weak and the strong point in the voluntary system. Those who have considerable strength of will remaining are more surely benefited by moral restraint alone, while others whose disease might be cured by prolonged treatment under restraint are allowed to relapse again and again. Dr. Beard thinks confinement does even more for the inebriate than for the insane, and so we think. In addition is required medical treatment, moral encouragement, and congenial occupation.

T. W. F.

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### FOSTER'S PRACTICAL PHYSIOLOGY.<sup>1</sup>

THE constantly increasing number of text-books professing to give practical directions for physiological investigations and demonstrations shows clearly how the conviction is gaining ground that to teach physiology successfully the didactic must be supplemented by the experimental method. The little volume before us contains a full description of a practical course in physiology as given by a most eminent and successful teacher of that science. Its most striking feature, and one which the author fears will be likely to restrict its use, is the close combination of histology and physiology, two branches which are commonly taught in distinct courses.

Professor Foster gives in his preface the following reasons for uniting these two subjects in a single course: "Histological work, unless it be salted with the salt either of physiological or of morphological ideas, is apt to degenerate into a learned trifling of the very worst description; and students are generally only too ready to spend far too much of their time in the fascinating drudgery of cutting sections and mounting stained specimens. In morphological questions the physiologist has but an indirect interest; and details of microscopic structure ought only to occupy his attention in so far as they serve as a basis for physiological deductions. The reader in looking through this little book will see that in its structure and function go hand in hand. In the case of each tissue or organ, as far as practicable, the anatomy and histology are first studied, and then without delay the physiology, so that the student may, in learning what is known concerning the action of the part, form an opinion of the relative importance of the structural details."

Of the soundness of these views there can be little doubt, and looking at the subject from the medical student's point of view it is perhaps to be regretted that in the specialization of medical instruction, histology and physiology have been so widely separated; but it must be borne in mind that investigations or advanced studies in these two branches require for their successful prosecution tastes and talents of very different sorts, which are only exception-

<sup>1</sup> *A Course of Elementary Practical Physiology.* By M. FOSTER, M. D., F. R. S., assisted by J. N. Langley, B. A. London: Macmillan & Co. 1876. Small 8vo, pp. 244.

ally, as in the case of Professor Foster, found united in the same individual. The special student of medical science will therefore find that, as a rule, progress in these two departments is favored by their separation.

It does not, however, necessarily follow that the use of the manual before us will on this account be restricted; for teachers in both these branches will find it of very great assistance in suggesting methods of giving practical instruction, and students both of histology and physiology will nowhere find a more useful set of directions for the prosecution of their studies. B.

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### WATSON ON DISEASES OF THE NOSE.<sup>1</sup>

THE extent of the field which the author has endeavored to cover in this book may be judged by a glance at the table of contents,—anatomy and physiology of the nose and nasal fossæ, twenty-three pages; preliminary remarks on rhinoscopy, anterior and posterior, and non-ulcerative affections of the mucous membrane of the nasal fossæ, fifty-two pages; ulcerative affections of the mucous membrane of the nasal fossæ, twenty-nine pages; ulceration of the bones and cartilages, necrosis and caries, certain affections of the septum, eleven pages; diseases and injuries of the frontal sinuses, twenty-one pages; diseases of the antrum of Highmore, forty-six pages; diseases of the lachrymal sac and nasal duct, twenty-pages; diseases of the skin and subcutaneous tissues, forty-one pages; tumors of the nasal fossæ and naso-pharyngeal polypi, twenty-three pages; injuries of the nose, five pages; malformations, distortions, and mutilations of the nose, twenty-eight pages; functional derangements of smell, anosmia, sneezing, spasmodic twitchings, fourteen pages; intracranial complications of affections of the nose and its accessory cavities, four pages; the function of smell in relation to hygiene, sanitary science, and medico-legal questions, fifteen pages; appendix of cases, seventy-nine pages.

It may be thought by some that the author has attempted a little too much, but it cannot be denied that, in view of the extent of his work, he has, as a rule, done it quite thoroughly, and has collected a mass of information on the above subjects which has never before been brought together in one book.

We are glad to see that the author lays stress upon the proper dilatation and illumination of the nares for anterior rhinoscopy, and that he makes favorable mention of the snare and other means of removing gelatinous polypi besides the murderous, old-fashioned forceps.

Meyer's remarks on the treatment of adenoid vegetations at the vault of the pharynx are quoted, but the author seems to have had no experience with them himself. Indeed, the mention of posterior rhinoscopy and its results in general is not such as we could have wished, and we fear that the author has had little experience with it, for he says (pages 32 and 33): "It is not often that much information as to nasal disease is obtainable by the use of the laryngoscope (rhinoscope), but when it is available the advantages derived from it are very great and striking;" and again, "all authorities are agreed that

<sup>1</sup> *Diseases of the Nose and its Accessory Cavities.* By W. SPENCER WATSON, F. R. C. S. Eng., B. M. Lond., etc., etc. London: H. K. Lewis. 1875. Small 8vo. Pp. 472.

posterior rhinoscopy presents very great difficulties, but that in a number of cases great skill, patience, and judgment on the part of the surgeon, with a corresponding amount of patience and self-control on the part of the patient, will enable us to examine this region with great advantage as an aid to diagnosis, treatment, and the ascertaining the results of treatment ;" an assertion which hardly conveys a fair estimate of the present state of science.

The book contains much valuable information, however, and will make a substantial addition to any medical library. In a future edition some chapters might be abridged without any real loss.

The work is illustrated by some excellent lithographic plates and wood-cuts.

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### PROFESSIONAL INCOMES.

EVIDENCE of the financial distress which has pervaded the country for nearly four years is not wanting in the medical profession. The downward tendency of prices which followed the first crash has been steadily affecting one class of the community after another, and physicians, although not among the first to suffer, have undoubtedly experienced during the past year a marked diminution of professional income. Our opportunities for observing this fact have been varied and numerous, showing clearly that in spite of the proverbial security of an income, which, though moderate, flows from the necessities of life rather than from its luxuries, there is no complete immunity from deep-seated financial disease such as the one from which we are now emerging. People are beginning to discover that the physician is, in many cases, a luxury which they are at present unable to afford, and have been driven in many cases by necessity to substitute their own offices for those of the doctor. A general shrinkage of incomes such as is witnessed at rare intervals in this country has been the result.

Other causes may have helped to bring this about. There has been inflation in medical education as well as in trade. The ranks of the profession were swelled by an unusual number of recruits during the war, and the study of medicine became more popular in the years following it. The readiness with which degrees have been obtained, and the somewhat limited choice which a young man in this country has who does not wish to apply himself to trade, have induced many to take up this calling.

These various agencies combine to make large professional emoluments more difficult of attainment than in former years. A glance at the past, however, will undoubtedly reassure many who complain of the present hard times.

We have had an opportunity to see a curious document, a remonstrance from the citizens in Beverly, of this State, to the physicians of that town against raising the fee for a medical visit from forty-two cents to fifty cents. The paper was drawn up at a town meeting held March 2, 1836, and was addressed to "Messrs. Ingalls Kittredge, W. C. Boyden, Ingalls Kittredge, Jr., and Augustus Torrey." The remonstrants respectfully represent that the present advance of prices is a grievance which calls for redress; affirm that although the education necessary for the practice of a profession is attended

with expense, citizens in other callings use more than the same amount of capital with less income in proportion to the arduousness of the service; point out that there is no scarcity of medical talent, and delicately hint that it is not the fault of the citizens that the population is not sufficiently large to maintain all the doctors; sympathize with them on account of the dull times and conclude in the following strain: "It does not appear to us that the present advance of prices will yield a corresponding advance of income; it may be a loss on our part of advice rather than an increase of receipts on yours, not to say that the difficulty of collecting your bills will be increased probably by the increased number of those who will be unable fully to discharge them, although we are aware that your facilities for collecting are equal or superior to those of others." We are happy to add that the gentlemen referred to refused to comply with these demands, and that the fee has steadily increased to the present time.

The medical fees of to-day are certainly not exorbitant, and with the return of better times those deserving success will doubtless have no cause to complain of a lack of due appreciation of their services.

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#### MEDICAL NOTES.

— Dr. George Johnson, in *The Lancet* of December 16, 1876, reports several cases in which the curative influence of a milk diet has seemed to him to be remarkable. In some of these cases various remedies had been tried and proved to be unsuccessful; but a resort to an exclusive milk diet was very beneficial. The *modus operandi* of the milk, says the reporter, is sufficiently obvious. The urine is largely diluted with water, and rendered mild and unirritating by the digestible nature of the food; the bladder, therefore, being comparatively undisturbed by its contents, reverts to its normal condition, the inflammation by the mucous membrane subsides, and the morbid secretion of puriform mucus ceases. The milk may be taken cold or tepid, and not more than a pint at a time, lest a large mass of curd collect in the stomach. Some adults will take as much as a gallon in the twenty-four hours. With some persons the milk is found to agree better after it has been boiled, and then taken either cold or tepid. If the milk be rich in cream, and the latter disagree, the cream may be partially removed by skimming; but the cream tends to obviate the constipation which is apt to result from an exclusive milk diet. Dr. Johnson suggests that a milk diet would be found very suitable for most patients during the first few days after the operation of lithotripsy, and that the same diet would help to prepare patients for the operation of lithotomy or lithotripsy.

— Dr. Orton states in *The British Medical Journal* of December 9, 1876, that he believes chloral hydrate causes congestion of the kidneys. The administration of the drug, therefore, cannot but be injurious to a patient who is already suffering from renal congestion. He reports two fatal cases in which chloral had been given in large doses, and post-mortem examination showed in both instances intense congestion of the kidneys.



— E. Hertzka reports a case of cure of piano-player's cramp in the *Petersburger medicinische-chirurgische Zeitung*, by the use of eight drops of tinctura gelsemii three times a day. The treatment lasted three weeks; hydrotherapeutic and electric methods of treatment had proved insufficient; the patient was a musician twenty-two years old.

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## BOSTON CITY HOSPITAL.

### SURGICAL CASES OF DR. GEORGE W. GAY.

*Organic Stricture of Urethra; Retention; Perineal Section.* — Mr. L., aged sixty-three years, a gardener, had gonorrhœa thirty-five years ago, and has had symptoms of a stricture nearly ever since. He was in this hospital in 1875, and was relieved by gradual dilatation. He entered the second time September, 1876, unable to pass his urine except by drops. In twenty-four hours he had complete retention. A distinct tumor in the hypogastrium extended four inches above the pubes, and palpation upon this body was plainly felt by a finger in the rectum.

A small aspirator needle was thrust into the tumor an inch above the pubes, and again two inches above without obtaining fluid. The bladder was then punctured per rectum with a long, curved trocar, and four ounces of dark-colored, fetid urine were drawn with complete relief to the patient. The canula was fastened into the bladder.

On the following day (September 3) the patient was etherized, and, a grooved probe having been passed into the urethra nearly to the bulb, the seat of the principal stricture, the canal was opened at that point by an incision through the perinæum. The tissues were greatly disorganized, and the membranous urethra was found ruptured. The anterior portion of the canal being very narrow and tortuous, it was freely divided with the urethrotome. After considerable trouble the orifice of the posterior portion of the urethra was found well forward toward the bulb, instead of deeper toward the prostate, where search is more apt to be made for it in these cases. An elastic catheter was carried along this canal at least four inches before reaching the bladder. It was retained two days, and afterwards the urine was allowed to flow as it would.

The canal was kept dilated as well as possible, and in a month half of the urine came from the meatus. At the end of three months the perineal wound was reduced to a sinus. A bougie (No. 8 French) with a leaden stylet was passed through the entire canal with little difficulty. The character of the urine had improved, and it could be retained about two hours. The general condition of the patient was also very much better than when he entered the hospital.

This patient is undoubtedly incurable. In view of this fact, and considering his circumstances, the extensive disease of his urinary organs, and the strong tendency of the strictures to contract, the question arises whether he would not be more comfortable during the remainder of his life, were the perineal sinus allowed to remain open. Cock reports a case of a man upon

whom he performed his operation for perineal section for an impermeable stricture, who passed his urine wholly from an opening in the perinæum for twenty years with great comfort.

That our patient's bladder is contracted, the walls greatly thickened, and the mucous membrane more or less disorganized is evident from the facts that the punctures above the pubes failed to obtain fluid, that four ounces of urine distended the viscus to its utmost capacity, that a tumor still remained in the hypogastrium after the urine was drawn off, that the urine was greatly altered in its qualities and was tolerated but a short time in the bladder, and, finally, that the disease has existed for so many years.

*Compound Fracture of Olecranon; Recovery with Anchylosis.*—Case I. Mrs. M., aged forty years, fell down-stairs, while intoxicated, October 9, 1875. On entering the hospital a short time after the accident, she was found to have received a compound fracture of the right olecranon process. The line of fracture extended transversely across the centre of the process, and the fragment was displaced half an inch upwards. A small wound led down to the fracture, and synovial fluid escaped freely within twenty-four hours.

The arm was placed upon a splint in nearly the straight position, and cool applications were made to it for several days; while gradually recovering from the effects of her debauch, she was seized on the fifth day with convulsions of an epileptiform character. She took one hundred and twenty grains of bromide of potassium in divided doses in two hours, and the fits ceased for the time. They recurred, however, a few days later, and were treated in the same manner with the same results. She had no more while under our observation.

Free and extensive suppuration in and about the elbow-joint ensued, requiring incisions and much care to maintain a free drainage. At the end of a month, anticipating more or less anchylosis, an internal angular splint was applied to the limb, and the fore-arm gradually brought to a right angle. The patient made a good recovery in two months and a half. There was no motion of the elbow, but the wounds were healed.

Case II. Mrs. O., forty-six years old, cook, a large, heavy woman, fell down-stairs October 26, 1876. She entered the hospital one week afterwards, having a compound fracture of the olecranon process of the left ulna. The symptoms were crepitus, mobility, and circumscribed tenderness. There was also an open wound leading down to the point of fracture, and synovial fluid was being discharged from the joint. As there was very little displacement of the fragment with the fore-arm flexed nearly to a right angle, the limb was placed upon a splint in that position during the entire treatment. Considerable inflammation and suppuration followed the injury. Burrowing of pus required one or two incisions. She had a mild attack of erysipelas soon after her admission. She steadily improved, however, and in ten weeks the wound was healed. Some motion remained in the elbow-joint, which will probably increase to a certain extent in the future.

Considering the facts that a large joint was opened by direct violence, that the fractures were compound, and that the general condition of the patients was not very promising, the results in these two cases must be looked upon as fortunate.

## COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING JANUARY 27, 1877.

	Estimated Population, July 1, 1877.	Total Mortality for the Week.	Annual Death-Rate per 1000 for the Week.	Death-Rate for the Year 1876.
New York	1,077,228	441	21.29	27.46
Philadelphia	850,856	272	16.62	22.88
Brooklyn .	527,830	196	19.31	24.31
Chicago . .	420,000	170	21.05	20.41
Boston . .	363,940	111	15.85	23.39
Providence	103,000	33	16.66	18.34
Worcester .	52,977	18	17.67	22.00
Lowell . .	53,678	29	28.09	22.21
Cambridge	51,572	12	12.09	20.54
Fall River	50,370	15	15.48	22.04
Lawrence .	37,626			23.32
Lynn . .	33,524	14	20.49	21.37
Springfield.	32,976	9	14.19	19.69
Salem . .	26,739	11	21.39	23.57

Normal Death-Rate, 17 per 1000.

**SUMMARY FOR JANUARY.**—The general death-rate of the cities above named was comparatively low throughout the month; in most of the cases it was considerably less than their mean annual mortality rate.

The principal diseases prevailed in the several cities as follows:—

In New York, scarlatina and diphtheria were the most fatal of the zymotic group, but they were not extensively prevalent. Phthisis, pneumonia, and bronchitis were the chief causes of death.

In Philadelphia, phthisis, pneumonia, and typhoid fever headed the list. Diphtheria and croup had considerable fatality. Small-pox exceeded scarlatina.

In Brooklyn, the order of fatality stood as follows: phthisis, pneumonia, diphtheria (and croup), and scarlet fever.

In Chicago, scarlet fever headed the list, exceeding even the fatality of phthisis; diphtheria and croup were next; then phthisis and pneumonia.

In Boston, the relative order of the month was: phthisis, pneumonia, diphtheria, and scarlet fever. The month has been a period of health.

In Providence, the death-rate was in excess of the annual average, owing in part to the prevalence of croup and diphtheria. Toward the end of the month, however, these diseases declined in fatality.

In eight Massachusetts cities besides Boston, phthisis, diphtheria (and croup), pneumonia, and scarlatina have been the chief causes of mortality.

**NORFOLK DISTRICT MEDICAL SOCIETY.**—A special meeting will be held in Bradley's Building, corner of Warren and Dudley streets, Roxbury, on Tuesday, February 13th, at eleven o'clock. Papers, communications, etc.:—

(1.) Robert Amory, M. D., Local Boards of Health and the Duties of the Medical Profession relating thereto.

(2.) James Waldo, M. D., Observations upon School Hygiene.

(3.) Clifton E. Wing, M. D., The Use of Uterine Supports.

(4.) Silas E. Gifford, M. D., Cases of Death Caused by Vaccination, with Remarks.

Members of other district societies are cordially invited to be present.

Lunch at 1.45, p. m.

ARTHUR H. NICHOLS, Secretary.